

ABSTRACT

A lens-attached light-emitting element having an improved optical availability efficiency is provided. A composite lens is provided on an approximately U-shaped light-emitting area of a light-emitting element array. A U-shaped polygonal line consisting of three segments is imagined when the positions where light intensity is maximum in the approximately U-shaped light-emitting area are fastened. Four parts of spherical lens are arranged in such a manner that each center thereof is at the both ends or the neighborhood of the both ends of respective three segments of the polygonal line, the three parts of cylindrical lens are arranged between two parts of spherical lens, respectively, each part of cylindrical lens having an axis parallel with each segment. These four parts of spherical lens and three parts of cylindrical lens are neighbored together to constitute the composite lens. The light-emitting element further comprises an antireflection film covering the light-emitting area, and the composite lens is formed on the surface of the antireflection film.